

## BOXED WARNING

### Cardiovascular Risk

- NSAIDs<sup>11</sup> may cause an increased risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke, which can be fatal. This risk may increase with duration of use. Patients with cardiovascular disease or risk factors for cardiovascular disease may be at greater risk. (See WARNINGS.)
- Hydrocodone bitartrate and ibuprofen tablets are contraindicated for the treatment of peri-operative pain in the setting of coronary artery bypass graft (CABG) surgery. (See WARNINGS.)

### Gastrointestinal Risk

- NSAIDs cause an increased risk of serious gastrointestinal adverse events including bleeding, ulceration, and perforation of the stomach or intestines, which can be fatal. These events can occur at any time during use and without warning symptoms. Elderly patients are at greater risk for serious gastrointestinal events. (See WARNINGS.)

<sup>11</sup> Throughout this package insert, the term NSAID refers to a non-aspirin non-steroidal anti-inflammatory drug.

## DESCRIPTION

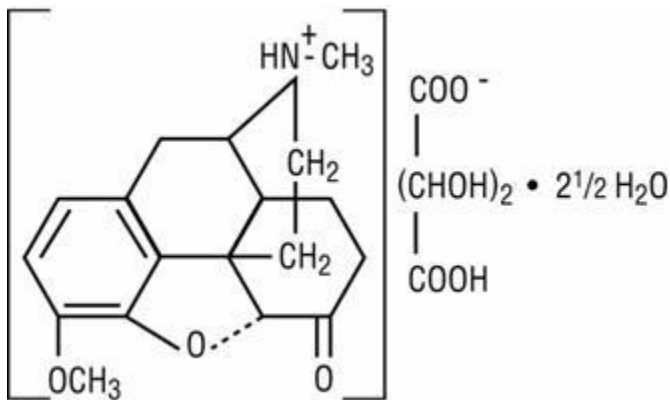
Each hydrocodone bitartrate and ibuprofen tablet contains:

hydrocodone bitartrate, USP 7.5 mg

ibuprofen, USP 200 mg

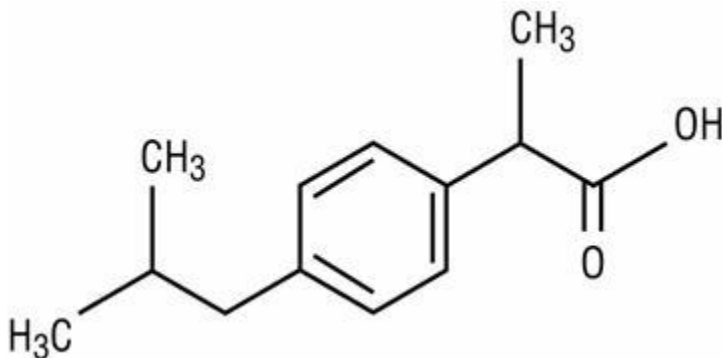
Hydrocodone bitartrate and ibuprofen tablets are supplied in a fixed combination tablet form for oral administration. Hydrocodone bitartrate and ibuprofen tablets combine the opioid analgesic agent, hydrocodone bitartrate, with the non-steroidal anti-inflammatory (NSAID) agent, ibuprofen.

Hydrocodone bitartrate is a semisynthetic and centrally acting opioid analgesic. Its chemical name is: 4,5  $\alpha$ -epoxy-3-methoxy-17-methylmorphinan-6-one tartrate (1:1) hydrate (2:5). Its structural formula is:



C<sub>18</sub>H<sub>21</sub>NO<sub>3</sub>•C<sub>4</sub>H<sub>6</sub>O<sub>6</sub>•2½ H<sub>2</sub>O M.W. 494.50

Ibuprofen is a non-steroidal anti-inflammatory agent [non-selective COX inhibitor] with analgesic and antipyretic properties. Its chemical name is: (±)-2-(*p*-isobutylphenyl) propionic acid. Its structural formula is:



C<sub>13</sub>H<sub>18</sub>O<sub>2</sub> M.W. 206.29

Inactive ingredients in hydrocodone bitartrate and ibuprofen tablets include: colloidal silicon dioxide, corn starch, hypromellose, lactose monohydrate, pregelatinized starch, polyethylene glycol, stearic acid, titanium dioxide, and triacetin.

## CLINICAL PHARMACOLOGY

### Hydrocodone Component

Hydrocodone is a semisynthetic opioid analgesic and antitussive with multiple actions qualitatively similar to those of codeine. Most of these involve the central nervous system and smooth muscle. The precise mechanism of action of hydrocodone and other opioids is not known, although it is believed to relate to the existence of opiate receptors in the central nervous system. In addition to analgesia, opioids may produce drowsiness, changes in mood, and mental clouding.

### Ibuprofen Component

Ibuprofen is a non-steroidal anti-inflammatory agent that possesses analgesic and antipyretic activities. Its mode action, like that of other NSAIDs, is not completely understood, but may be related to inhibition of cyclooxygenase activity and prostaglandin synthesis. Ibuprofen is a peripherally acting analgesic. Ibuprofen does not have any known effects on opiate receptors.

### Pharmacokinetics

#### Absorption

After oral dosing with the hydrocodone bitartrate and ibuprofen tablet, a peak hydrocodone plasma level of 27 ng/mL is achieved at 1.7 hours, and a peak ibuprofen plasma level of 30 mcg/mL is achieved at 1.8 hours. The effect of food on the absorption of either component from the hydrocodone bitartrate and ibuprofen tablet has not been established.

#### Distribution

Ibuprofen is highly protein-bound (99%) like most other non-steroidal anti-inflammatory agents. Although the extent of protein binding of hydrocodone in human plasma has not been definitely determined, structural similarities to related opioid analgesics suggest that hydrocodone is not extensively protein bound. As most agents in the 5-ring morphinan group of semi-synthetic opioids bind plasma protein to a similar degree (range 19% [hydromorphone] to 45% [oxycodone]), hydrocodone is expected to fall within this range.

#### Metabolism

Hydrocodone exhibits a complex pattern of metabolism, including *O*-demethylation, *N*-demethylation, and 6-keto reduction to the corresponding 6- $\alpha$  and 6- $\beta$ -hydroxy metabolites. Hydromorphone, a potent opioid, is formed from the *O*-demethylation of hydrocodone and contributes to the total analgesic effect of hydrocodone. The *O*- and *N*-demethylation processes are mediated by separate P-450 isoenzymes: CYP2D6 and CYP3A4, respectively.

Ibuprofen is present in this product as a racemate, and following absorption it undergoes interconversion in the plasma from the R-isomer to the S-isomer. Both the R- and S-isomers are metabolized to two primary metabolites: (+)-2-4'-(2hydroxy-2-methyl-propyl) phenyl propionic acid and (+)-2-4'-(2carboxypropyl) phenyl propionic acid, both of which circulate in the plasma at low levels relative to the parent.

#### Elimination

Hydrocodone and its metabolites are eliminated primarily in the kidneys, with a mean plasma half-life of 4.5 hours. Ibuprofen is excreted in the urine, 50% to 60% as metabolites and approximately 15% as unchanged drug and conjugate. The plasma half-life is 2.2 hours.

#### Special Populations

No significant pharmacokinetic differences based on age or gender have been demonstrated. The pharmacokinetics of hydrocodone and ibuprofen from hydrocodone bitartrate and ibuprofen tablets has not been evaluated in children.

#### Renal Impairment

The effect of renal insufficiency on the pharmacokinetics of the hydrocodone bitartrate and ibuprofen dosage form has not been determined.

## CLINICAL STUDIES

In single-dose studies of post surgical pain (abdominal, gynecological, orthopedic), 940 patients were studied at doses of one or two tablets. Hydrocodone bitartrate and ibuprofen tablets produced greater efficacy than placebo and each of its individual components given at the same dose. No advantage was demonstrated for the two-tablet dose.

## INDICATIONS AND USAGE

Carefully consider the potential benefits and risks of hydrocodone bitartrate and ibuprofen tablets and other treatment options before deciding to use hydrocodone bitartrate and ibuprofen tablets. Use the lowest effective dose for the shortest duration consistent with individual patient treatment goals (see **WARNINGS**).

Hydrocodone bitartrate and ibuprofen tablets are indicated for the short-term (generally less than 10 days) management of acute pain. Hydrocodone bitartrate and ibuprofen tablets are not indicated for the treatment of such conditions as osteoarthritis or rheumatoid arthritis.

## CONTRAINDICATIONS

Hydrocodone bitartrate and ibuprofen tablets are contraindicated in patients with known hypersensitivity to hydrocodone or ibuprofen. Patients known to be hypersensitive to other opioids may exhibit cross-sensitivity to hydrocodone.

Hydrocodone bitartrate and ibuprofen tablets should not be given to patients who have experienced asthma, urticaria, or allergic-type reactions after taking aspirin or other NSAIDs. Severe, rarely fatal, anaphylactic-like reactions to NSAIDs have been reported in such patients (see **WARNINGS, Anaphylactoid Reactions** and **PRECAUTIONS, Preexisting Asthma**).

Hydrocodone bitartrate and ibuprofen tablets are contraindicated for the treatment of peri-operative pain in the setting of coronary artery bypass graft (CABG) surgery (see **WARNINGS**).

## WARNINGS

### CARDIOVASCULAR EFFECTS

#### Cardiovascular Thrombotic Events

Clinical trials of several COX-2 selective and nonselective NSAIDs of up to three years duration have shown an increased risk of serious cardiovascular (CV) thrombotic events, myocardial infarction, and stroke, which can be fatal. All NSAIDs, both COX-2 selective and nonselective, may have a similar risk. Patients with known CV disease or risk factors for CV disease may be at greater risk. To minimize the potential risk for an adverse CV event in patients treated with an NSAID, the lowest effective dose should be used for the shortest duration possible. Physicians and patients should remain alert for the development of such events, even in the absence of previous CV symptoms. Patients should be informed about the signs and/or symptoms of serious CV events and the steps to take if they occur.

There is no consistent evidence that concurrent use of aspirin mitigates the increased risk of serious CV thrombotic events associated with NSAID use. The concurrent use of aspirin and an NSAID does increase the risk of serious GI events (see **Gastrointestinal (GI) Effects - Risk of GI Ulceration, Bleeding and Perforation**).

Two large, controlled, clinical trials of a COX-2 selective NSAID for the treatment of pain in the first 10 to 14 days following CABG surgery found an increased incidence of myocardial infarction and stroke (see **CONTRAINDICATIONS**).

#### Hypertension

NSAID-containing products, including hydrocodone bitartrate and ibuprofen tablets, can lead to onset of new hypertension or worsening of preexisting hypertension, either of which may contribute to the increased incidence of CV events. Patients taking thiazides or loop diuretics may have impaired response to these therapies when taking NSAIDs. NSAID-containing products, including hydrocodone bitartrate and ibuprofen tablets, should be used with caution in patients with hypertension. Blood pressure (BP) should be monitored closely during the initiation of NSAID treatment and throughout the course of therapy.

#### Congestive Heart Failure and Edema

Fluid retention and edema have been observed in some patients taking NSAIDs. Hydrocodone bitartrate and ibuprofen tablets should be used with caution in patients with fluid retention or heart failure.

#### Misuse, Abuse and Diversion of Opioids

Hydrocodone bitartrate and ibuprofen tablets contain hydrocodone, an opioid agonist, and are a Schedule III controlled substance. Opioid agonists have the potential for being abused and are sought by abusers and people with addiction disorders, and are subject to diversion.

Hydrocodone bitartrate and ibuprofen tablets can be abused in a manner similar to other opioid agonists, legal or illicit. This should be considered when prescribing or dispensing hydrocodone bitartrate and ibuprofen tablets in situations where the physician or pharmacist is concerned about an increased risk of misuse, abuse or diversion (see **DRUG ABUSE AND DEPENDENCE**).

#### Respiratory Depression

At high doses or in opioid-sensitive patients, hydrocodone may produce dose-related respiratory depression by acting directly on the brain stem respiratory centers. Hydrocodone also affects the center that controls respiratory rhythm, and may produce irregular and periodic breathing.

### **Head Injury and Increased Intracranial Pressure**

The respiratory depressant effects of opioids and their capacity to elevate cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, intracranial lesions or a preexisting increase in intracranial pressure. Furthermore, opioids produce adverse reactions which may obscure the clinical course of patients with head injuries.

### **Acute Abdominal Conditions**

The administration of opioids may obscure the diagnosis or clinical course of patients with acute abdominal conditions.

### **Gastrointestinal (GI) Effects - Risk of GI Ulceration, Bleeding and Perforation**

NSAIDs, including hydrocodone bitartrate and ibuprofen tablets, can cause serious gastrointestinal (GI) adverse events including inflammation, bleeding, ulceration, and perforation of the stomach, small intestine, or large intestine, which can be fatal. These serious adverse events can occur at any time, with or without warning symptoms, in patients treated with NSAIDs. Only one in five patients who develops a serious upper GI adverse event on NSAID therapy, is symptomatic. Upper GI ulcers, gross bleeding, or perforation caused by NSAIDs occur in approximately 1% of patients treated for 3 to 6 months, and in about 2 to 4% of patients treated for one year. These trends continue with longer duration of use, increasing the likelihood of developing a serious GI event at some time during the course of therapy. However, even short-term therapy is not without risk.

NSAIDs should be prescribed with extreme caution in those with a prior history of ulcer disease or gastrointestinal bleeding. Patients with a *prior history of peptic ulcer disease and/or gastrointestinal bleeding* who use NSAIDs have a greater than 10 fold increased risk for developing a GI bleed compared to patients with neither of these risk factors. Other factors that increase the risk for GI bleeding in patients treated with NSAIDs include concomitant use of oral corticosteroids or anticoagulants, longer duration of NSAID therapy, smoking, use of alcohol, older age, and poor general health status. Most spontaneous reports of fatal GI events are in elderly or debilitated patients and therefore, special care should be taken in treating this population.

To minimize the potential risk for an adverse GI event in patients treated with an NSAID, the lowest effective dose should be used for the shortest possible duration. Patients and physicians should remain alert for signs and symptoms of GI ulceration and bleeding during NSAID therapy and promptly initiate additional evaluation and treatment if a serious GI adverse event is suspected. This should include discontinuation of the NSAID until a serious GI adverse event is ruled out. For high-risk patients, alternate therapies that do not involve NSAIDs should be considered.

### **Renal Effects**

Long-term administration of NSAIDs has resulted in renal papillary necrosis and other renal injury. Renal toxicity has also been seen in patients in whom renal prostaglandins have a compensatory role in the maintenance of renal perfusion. In these patients, administration of a non-steroidal anti-inflammatory drug may cause a dose-dependent reduction in prostaglandin formation and, secondarily, in renal blood flow, which may precipitate overt renal decompensation. Patients at greatest risk of this reaction are those with impaired renal function, heart failure, liver dysfunction, those taking diuretics and ACE inhibitors, and the elderly. Discontinuation of NSAID therapy is usually followed by recovery to the pretreatment state.

### **Advanced Renal Disease**

No information is available from controlled clinical studies regarding the use of hydrocodone bitartrate and ibuprofen tablets in patients with advanced renal disease. Therefore, treatment with hydrocodone bitartrate and ibuprofen tablets is not recommended in these patients with advanced renal disease. If hydrocodone bitartrate and ibuprofen tablet therapy must be initiated, close monitoring of the patient's renal function is advisable.

### **Anaphylactoid Reactions**

As with other NSAID-containing products, anaphylactoid reactions may occur in patients without known prior exposure to hydrocodone bitartrate and ibuprofen tablets. Hydrocodone bitartrate and ibuprofen tablets should not be given to patients with the aspirin triad. This symptom complex typically occurs in asthmatic patients who experience rhinitis with or without nasal polyps, or who exhibit severe, potentially fatal bronchospasm after taking aspirin or other NSAIDs. Fatal reactions to NSAIDs have been reported in such patients (see **CONTRAINDICATIONS** and **PRECAUTIONS, Preexisting Asthma**). Emergency help should be sought in cases where an anaphylactoid reaction occurs.

### **Skin Reactions**

Products containing NSAIDs, including hydrocodone bitartrate and ibuprofen tablets, can cause serious skin adverse events such as exfoliative dermatitis, Stevens-Johnson syndrome (SJS), and toxic epidermal necrolysis (TEN), which can be fatal. These serious events may occur without warning. Patients should be informed about the signs and symptoms of serious skin manifestations and use of the drug should be discontinued at the first appearance of skin rash or any other sign of hypersensitivity.

### **Pregnancy**

As with other NSAID-containing products, hydrocodone bitartrate and ibuprofen tablets should be avoided in late pregnancy because they may cause premature closure of the ductus arteriosus.

## PRECAUTIONS

### General

Hydrocodone bitartrate and ibuprofen tablets cannot be expected to substitute for corticosteroids or to treat corticosteroid insufficiency. Abrupt discontinuation of corticosteroids may lead to disease exacerbation. Patients on prolonged corticosteroid therapy should have their therapy tapered slowly if a decision is made to discontinue corticosteroids.

The pharmacological activity of hydrocodone bitartrate and ibuprofen tablets in reducing fever and inflammation may diminish the utility of these diagnostic signs in detecting complications of presumed noninfectious, painful conditions.

### Special Risk Patients

As with any opioid analgesic agent, hydrocodone bitartrate and ibuprofen tablets should be used with caution in elderly or debilitated patients, and those with severe impairment of hepatic or renal function, hypothyroidism, Addison's disease, prostatic hypertrophy or urethral stricture. The usual precautions should be observed and the possibility of respiratory depression should be kept in mind.

### Cough Reflex

Hydrocodone suppresses the cough reflex; as with opioids, caution should be exercised when hydrocodone bitartrate and ibuprofen tablets are used postoperatively and in patients with pulmonary disease.

### Hepatic Effects

Borderline elevations of one or more liver enzymes may occur in up to 15% of patients taking NSAIDs including ibuprofen as found in hydrocodone bitartrate and ibuprofen tablets. These laboratory abnormalities may progress, may remain unchanged, or may be transient with continued therapy. Notable elevations of SGPT (ALT) or SGOT (AST) (approximately three or more times the upper limit of normal) have been reported in approximately 1% of patients in clinical trials with NSAIDs. In addition, rare cases of severe hepatic reactions, including jaundice and fatal fulminant hepatitis, liver necrosis and hepatic failure, some of them with fatal outcomes have been reported.

A patient with symptoms and/or signs suggesting liver dysfunction, or in whom an abnormal liver test has occurred, should be evaluated for evidence of the development of more severe hepatic reactions while on hydrocodone bitartrate and ibuprofen tablet therapy. If clinical signs and symptoms consistent with liver disease develop, or if systemic manifestations occur (e.g., eosinophilia, rash, etc.), hydrocodone bitartrate and ibuprofen tablets should be discontinued.

### Hematological Effects

Anemia is sometimes seen in patients receiving NSAIDs, including ibuprofen as found in hydrocodone bitartrate and ibuprofen tablets. This may be due to fluid retention, occult or gross GI blood loss, or an incompletely described effect upon erythropoiesis. Patients on long-term treatment with NSAIDs including ibuprofen, should have their hemoglobin or hematocrit checked if they exhibit any signs or symptoms of anemia.

NSAIDs inhibit platelet aggregation and have been shown to prolong bleeding time in some patients. Unlike aspirin, their effect on platelet function is quantitatively less, of shorter duration, and reversible. Patients receiving hydrocodone bitartrate and ibuprofen tablets who may be adversely affected by alterations in platelet function, such as those with coagulation disorders or patients receiving anticoagulants, should be carefully monitored.

### Preexisting Asthma

Patients with asthma may have aspirin-sensitive asthma. The use of aspirin in patients with aspirin-sensitive asthma has been associated with severe bronchospasm, which may be fatal. Since cross-reactivity between aspirin and other NSAIDs has been reported in such aspirin-sensitive patients, hydrocodone bitartrate and ibuprofen tablets should not be administered to patients with this form of aspirin sensitivity and should be used with caution in patients with preexisting asthma.

### Aseptic Meningitis

Aseptic meningitis with fever and coma has been observed on rare occasions in patients on ibuprofen therapy as found in hydrocodone bitartrate and ibuprofen tablets. Although it is probably more likely to occur in patients with systemic lupus erythematosus and related connective tissue diseases, it has been reported in patients who do not have an underlying chronic disease. If signs or symptoms of meningitis develop in a patient on hydrocodone bitartrate and ibuprofen tablets, the possibility of its being related to ibuprofen should be considered.

### Information for Patients

**Patients should be informed of the following information before initiating therapy with an NSAID and periodically during the course of ongoing therapy. Patients should also be encouraged to read the hydrocodone bitartrate and ibuprofen tablet Medication Guide that accompanies each prescription dispensed.**

1. Hydrocodone bitartrate and ibuprofen tablets, 7.5 mg/200 mg, like other opioid-containing analgesics, may impair mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery; patients should be cautioned accordingly.

2. Alcohol and other CNS depressants may produce an additive CNS depression, when taken with this combination product, and should be avoided.
3. Hydrocodone bitartrate and ibuprofen tablets can be abused in a manner similar to other opioid agonists, legal or illicit. Hydrocodone bitartrate and ibuprofen tablets may be habit-forming. Patients should take the drug only for as long as it is prescribed, in the amounts prescribed, and no more frequently than prescribed.
4. Hydrocodone bitartrate and ibuprofen tablets, like other NSAID-containing products, may cause serious CV side effects, such as MI or stroke, which may result in hospitalization and even death. Although serious CV events can occur without warning symptoms, patients should be alert for the signs and symptoms of chest pain, shortness of breath, weakness, slurring of speech, and should ask for medical advice when observing any indicative sign or symptoms. Patients should be apprised of the importance of this follow-up (see **WARNINGS, Cardiovascular Effects**).
5. Hydrocodone bitartrate and ibuprofen tablets, like other NSAID-containing products, can cause GI discomfort and serious GI side effects, such as ulcers and bleeding, which may result in hospitalization and even death. Although serious GI tract ulcerations and bleeding can occur without warning symptoms, patients should be alert for the signs and symptoms of ulcerations and bleeding, and should ask for medical advice when observing any indicative sign or symptoms including epigastric pain, dyspepsia, melena, and hematemesis. Patients should be apprised of the importance of this follow-up (see **WARNINGS, Gastrointestinal (GI) Effects - Risk of GI Ulceration, Bleeding and Perforation**).
6. Hydrocodone bitartrate and ibuprofen tablets, like other NSAID-containing products, can cause serious skin side effects such as exfoliative dermatitis, SJS, and TEN, which may result in hospitalizations and even death. Although serious skin reactions may occur without warning, patients should be alert for the signs and symptoms of skin rash and blisters, fever, or other signs of hypersensitivity such as itching, and should ask for medical advice when observing any indicative signs or symptoms. Patients should be advised to stop the drug immediately if they develop any type of rash and contact their physicians as soon as possible.
7. Patients should promptly report signs or symptoms of unexplained weight gain or edema to their physicians.
8. Patients should be informed of the warning signs and symptoms of hepatotoxicity (e.g., nausea, fatigue, lethargy, pruritus, jaundice, right upper quadrant tenderness, and "flu-like" symptoms). If these occur, patients should be instructed to stop therapy and seek immediate medical therapy.
9. Patients should be informed of the signs of an anaphylactoid reaction (e.g., difficulty breathing, swelling of the face or throat). If these occur, patients should be instructed to seek immediate emergency help (see **WARNINGS**).
10. In late pregnancy, as with other NSAIDs, hydrocodone bitartrate and ibuprofen tablets should be avoided because they may cause premature closure of the ductus arteriosus.
11. Patients should be instructed to report any signs of blurred vision or other eye symptoms.

### **Laboratory Tests**

Because serious GI tract ulcerations and bleeding can occur without warning symptoms, physicians should monitor for signs or symptoms of GI bleeding. Patients on long-term treatment with NSAIDs, should have their CBC and a chemistry profile checked periodically. If clinical signs and symptoms consistent with liver or renal disease develop, systemic manifestations occur (e.g., eosinophilia, rash, etc.) or if abnormal liver tests persist or worsen, hydrocodone bitartrate and ibuprofen tablets should be discontinued.

### **Drug Interactions**

#### **ACE-inhibitors**

Reports suggest that NSAIDs may diminish the antihypertensive effect of ACE-inhibitors. This interaction should be given consideration in patients taking hydrocodone bitartrate and ibuprofen tablets concomitantly with ACE-inhibitors.

#### **Anticholinergics**

The concurrent use of anticholinergics with hydrocodone preparations may produce paralytic ileus.

#### **Antidepressants**

The use of Monoamine Oxidase Inhibitors (MAOIs) or tricyclic antidepressants with hydrocodone bitartrate and ibuprofen tablets may increase the effect of either the antidepressant or hydrocodone.

MAOIs have been reported to intensify the effects of at least one opioid drug causing anxiety, confusion and significant depression of respiration or coma. The use of hydrocodone is not recommended for patients taking MAOIs or within 14 days of stopping such treatment.

#### Aspirin

When hydrocodone bitartrate and ibuprofen tablets are administered with aspirin, the protein binding of aspirin is reduced, although the clearance of free hydrocodone bitartrate and ibuprofen is not altered. The clinical significance of this interaction is not known; however, as with other NSAID-containing products, concomitant administration of hydrocodone bitartrate and ibuprofen tablets and aspirin is not generally recommended because of the potential of increased adverse effects.

#### CNS Depressants

Patients receiving other opioids, antihistamines, antipsychotics, antianxiety agents, or other CNS depressants (including alcohol) concomitantly with hydrocodone bitartrate and ibuprofen tablets may exhibit an additive CNS depression. When combined therapy is contemplated, the dose of one or both agents should be reduced.

#### Diuretics

Ibuprofen has been shown to reduce the natriuretic effect of furosemide and thiazides in some patients. This response has been attributed to inhibition of renal prostaglandin synthesis. During concomitant therapy with hydrocodone bitartrate and ibuprofen tablets, the patient should be observed closely for signs of renal failure (see **WARNINGS, Renal Effects**), as well as diuretic efficacy.

#### Lithium

Ibuprofen has been shown to elevate plasma lithium concentration and reduce renal lithium clearance. The mean minimum lithium concentration increased 15% and the renal clearance was decreased by approximately 20%. This effect has been attributed to inhibition of renal prostaglandin synthesis by ibuprofen. Thus, when hydrocodone bitartrate and ibuprofen tablets and lithium are administered concurrently, patients should be observed for signs of lithium toxicity.

#### Methotrexate

Ibuprofen, as well as other NSAIDs, has been reported to competitively inhibit methotrexate accumulation in rabbit kidney slices. This may indicate that ibuprofen could enhance the toxicity of methotrexate. Caution should be used when hydrocodone bitartrate and ibuprofen tablets are administered concomitantly with methotrexate.

#### Mixed Agonist/Antagonist Opioid Analgesics

Agonist/antagonist analgesics (i.e., pentazocine, nalbuphine, butorphanol and buprenorphine) should be administered with caution to patients who have received or are receiving a course of therapy with a pure opioid agonist analgesic such as hydrocodone. In this situation, mixed agonist/antagonist analgesics may reduce the analgesic effect of hydrocodone and/or may precipitate withdrawal symptoms in these patients.

#### Neuromuscular Blocking Agents

Hydrocodone, as well as other opioid analgesics, may enhance the neuromuscular blocking action of skeletal muscle relaxants and produce an increased degree of respiratory depression.

#### Warfarin

The effects of warfarin and NSAIDs on GI bleeding are synergistic, such that users of both drugs together have a risk of serious GI bleeding higher than users of either drug alone.

#### **Carcinogenesis, Mutagenesis, Impairment of Fertility**

The carcinogenic and mutagenic potential of hydrocodone bitartrate and ibuprofen has not been investigated. The ability of hydrocodone bitartrate and ibuprofen to impair fertility has not been assessed.

#### **Pregnancy**

##### Teratogenic Effects

##### Pregnancy category C

Reproductive studies conducted in rats and rabbits have not demonstrated evidence of developmental abnormalities.

Hydrocodone bitartrate and ibuprofen, administered to rabbits at 95 mg/kg (5.72 and 1.9 times the maximum clinical dose based on body weight and surface area, respectively), a maternally toxic dose, resulted in an increase in the percentage of litters and fetuses with any major abnormality and an increase in the number of litters and fetuses with one or more nonossified metacarpals (a minor abnormality). Hydrocodone bitartrate and ibuprofen, administered to rats at 166 mg/kg (10.0 and 1.66 times the maximum clinical dose based on body weight and surface area, respectively), a maternally toxic dose, did not result in any reproductive toxicity. However, animal reproduction studies are not always predictive of human response. There are no adequate and well-controlled studies

in pregnant women. Hydrocodone bitartrate and ibuprofen tablets should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

#### Nonteratogenic Effects

Because of the known effects of non-steroidal anti-inflammatory drugs on the fetal cardiovascular system (closure of ductus arteriosus), use during pregnancy (particularly late pregnancy) should be avoided. Babies born to mothers who have been taking opioids regularly prior to delivery will be physically dependent. The withdrawal signs include irritability and excessive crying, tremors, hyperactive reflexes, increased respiratory rate, increased stools, sneezing, yawning, vomiting, and fever. The intensity of the syndrome does not always correlate with the duration of maternal opioid use or dose. There is no consensus on the best method of managing withdrawal.

#### Labor and Delivery

As with other drugs known to inhibit prostaglandin synthesis, an increased incidence of dystocia and delayed parturition occurred in rats. Administration of hydrocodone bitartrate and ibuprofen tablets is not recommended during labor and delivery. The effects of hydrocodone bitartrate and ibuprofen tablets on labor and delivery in pregnant women are unknown.

#### Nursing Mothers

It is not known whether hydrocodone is excreted in human milk. In limited studies, an assay capable of detecting 1 mcg/mL did not demonstrate ibuprofen in the milk of lactating mothers. However, because of the limited nature of the studies, and because of the potential for serious adverse reactions in nursing infants from hydrocodone bitartrate and ibuprofen tablets, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

#### Pediatric Use

The safety and effectiveness of hydrocodone bitartrate and ibuprofen in pediatric patients below the age of 16 have not been established.

#### Geriatric Use

In controlled clinical trials there was no difference in tolerability between patients < 65 years of age and those ≥ 65, apart from an increased tendency of the elderly to develop constipation. However, because the elderly may be more sensitive to the renal and gastrointestinal effects of non-steroidal anti-inflammatory agents as well as possible increased risk of respiratory depression with opioids, extra caution and reduced dosages should be used when treating the elderly with hydrocodone bitartrate and ibuprofen tablets.

#### ADVERSE REACTIONS

Hydrocodone bitartrate and ibuprofen tablets were administered to approximately 300 pain patients in a safety study that employed dosages and a duration of treatment sufficient to encompass the recommended usage (see **DOSAGE AND ADMINISTRATION**). Adverse event rates generally increased with increasing daily dose. The event rates reported below are from approximately 150 patients who were in a group that received one tablet of hydrocodone bitartrate and ibuprofen an average of three to four times daily. The overall incidence rates of adverse experiences in the trials were fairly similar for this patient group and those who received the comparison treatment, acetaminophen 600 mg with codeine 60 mg.

The following lists adverse events that occurred with an incidence of 1% or greater in clinical trials of hydrocodone bitartrate and ibuprofen tablets, without regard to the causal relationship of the events to the drug. To distinguish different rates of occurrence in clinical studies, the adverse events are listed as follows:

*name of adverse event= less than 3%*

*adverse events marked with an asterisk \*= 3% to 9%*

*adverse event rates over 9% are in parentheses.*

**Body as a Whole:** Abdominal pain\*; Asthenia\*; Fever; Flu syndrome; Headache (27%); Infection\*; Pain.

**Cardiovascular:** Palpitations; Vasodilation.

**Central Nervous System:** Anxiety\*; Confusion; Dizziness (14%); Hypertonia; Insomnia\*; Nervousness\*; Paresthesia; Somnolence (22%); Thinking abnormalities.

**Digestive:** Anorexia; Constipation (22%); Diarrhea\*; Dry mouth\*; Dyspepsia (12%); Flatulence\*; Gastritis; Melena; Mouth ulcers; Nausea (21%); Thirst; Vomiting\*.

**Metabolic and Nutritional Disorders:** Edema\*.

**Respiratory:** Dyspnea; Hiccups; Pharyngitis; Rhinitis.

**Skin and Appendages:** Pruritus\*; Sweating\*.

**Special Senses:** Tinnitus.

**Urogenital:** Urinary frequency.

#### Incidence less than 1%

**Body as a Whole:** Allergic reaction.

**Cardiovascular:** Arrhythmia; Hypotension; Tachycardia.



**Central Nervous System:** Agitation; Abnormal dreams; Decreased libido; Depression; Euphoria; Mood changes; Neuralgia; Slurred speech; Tremor; Vertigo.

**Digestive:** Chalky stool; “Clenching teeth”; Dysphagia; Esophageal spasm; Esophagitis; Gastroenteritis; Glossitis; Liver enzyme elevation.

**Metabolic and Nutritional:** Weight decrease.

**Musculoskeletal:** Arthralgia; Myalgia.

**Respiratory:** Asthma; Bronchitis; Hoarseness; Increased cough; Pulmonary congestion; Pneumonia; Shallow breathing; Sinusitis.

**Skin and Appendages:** Rash; Urticaria.

**Special Senses:** Altered vision; Bad taste; Dry eyes.

**Urogenital:** Cystitis; Glycosuria; Impotence; Urinary incontinence; Urinary retention.

## **DRUG ABUSE AND DEPENDENCE**

### **Misuse, Abuse and Diversion of Opioids**

Hydrocodone bitartrate and ibuprofen tablets contain hydrocodone, an opioid agonist, and are a Schedule III controlled substance. Hydrocodone bitartrate and ibuprofen tablets, and other opioids used in analgesia can be abused and are subject to criminal diversion. Addiction is a primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving. Drug addiction is a treatable disease utilizing a multidisciplinary approach, but relapse is common.

“Drug seeking” behavior is very common in addicts and drug abusers. Drug-seeking tactics include emergency calls or visits near the end of office hours, refusal to undergo appropriate examination, testing or referral, repeated “loss” of prescriptions, tampering with prescriptions and reluctance to provide prior medical records or contact information for other treating physician(s). “Doctor shopping” to obtain additional prescriptions is common among drug abusers and people suffering from untreated addiction.

Abuse and addiction are separate and distinct from physical dependence and tolerance. Physical dependence usually assumes clinically significant dimensions only after several weeks of continued opioid use, although a mild degree of physical dependence may develop after a few days of opioid therapy. Tolerance, in which increasingly large doses are required in order to produce the same degree of analgesia, is manifested initially by a shortened duration of analgesic effect, and subsequently by decreases in the intensity of analgesia. The rate of development of tolerance varies among patients. Physicians should be aware that abuse of opioids can occur in the absence of true addiction and is characterized by misuse for non-medical purposes, often in combination with other psychoactive substances. Hydrocodone bitartrate and ibuprofen tablets, like other opioids, may be diverted for non-medical use. Record-keeping of prescribing information, including quantity, frequency, and renewal requests is strongly advised. Proper assessment of the patient, proper prescribing practices, periodic re-evaluation of therapy, and proper dispensing and storage are appropriate measures that help to limit abuse of opioid drugs.

## **OVERDOSAGE**

Following an acute overdosage, toxicity may result from hydrocodone and/or ibuprofen.

### **Signs and Symptoms**

#### **Hydrocodone Component**

Serious overdose with hydrocodone is characterized by respiratory depression (a decrease in respiratory rate and/or tidal volume, Cheyne-Stokes respiration, cyanosis) extreme somnolence progressing to stupor or coma, skeletal muscle flaccidity, cold and clammy skin, and sometimes bradycardia and hypotension. In severe overdosage, apnea, circulatory collapse, cardiac arrest and death may occur.

#### **Ibuprofen Component**

Symptoms include gastrointestinal irritation with erosion and hemorrhage or perforation, kidney damage, liver damage, heart damage, hemolytic anemia, agranulocytosis, thrombocytopenia, aplastic anemia, and meningitis. Other symptoms may include headache, dizziness, tinnitus, confusion, blurred vision, mental disturbances, skin rash, stomatitis, edema, reduced retinal sensitivity, corneal deposits, and hyperkalemia.

### **Treatment**

Primary attention should be given to the re-establishment of adequate respiratory exchange through provision of a patent airway and the institution of assisted or controlled ventilation. Naloxone, a narcotic antagonist, can reverse respiratory depression and coma associated with opioid overdose or unusual sensitivity to opioids, including hydrocodone. Therefore, an appropriate dose of naloxone hydrochloride should be administered intravenously with simultaneous efforts at respiratory resuscitation. Since the duration of action of hydrocodone may exceed that of the naloxone, the patient should be kept under continuous surveillance and repeated doses of the antagonist should be administered as needed to maintain adequate respiration. Supportive measures should be employed as indicated. Gastric emptying may be useful in removing unabsorbed drug. In cases where consciousness is impaired it may be inadvisable to perform gastric lavage. If gastric lavage is performed, little drug will likely be recovered if more than an hour has elapsed since

ingestion. Ibuprofen is acidic and is excreted in the urine; therefore, it may be beneficial to administer alkali and induce diuresis. In addition to supportive measures the use of oral activated charcoal may help to reduce the absorption and reabsorption of ibuprofen. Dialysis is not likely to be effective for removal of ibuprofen because it is very highly bound to plasma proteins.

## **DOSAGE AND ADMINISTRATION**

Carefully consider the potential benefits and risks of hydrocodone bitartrate and ibuprofen tablets and other treatment options before deciding to use hydrocodone bitartrate and ibuprofen tablets. Use the lowest effective dose for the shortest duration consistent with individual patient treatment goals (see **WARNINGS**).

After observing the response to initial therapy with hydrocodone bitartrate and ibuprofen tablets, the dose and frequency should be adjusted to suit an individual patient's needs.

For the short-term (generally less than 10 days) management of acute pain, the recommended dose of hydrocodone bitartrate and ibuprofen is one tablet every 4 to 6 hours, as necessary. Dosage should not exceed 5 tablets in a 24 hour period. It should be kept in mind that tolerance to hydrocodone can develop with continued use and that the incidence of untoward effects is dose related.

The lowest effective dose or the longest dosing interval should be sought for each patient (see **WARNINGS**), especially in the elderly.

After observing the initial response to therapy with hydrocodone bitartrate and ibuprofen tablets, the dose and frequency of dosing should be adjusted to suit the individual patient's need, without exceeding the total daily dose recommended.

## **HOW SUPPLIED**

Hydrocodone bitartrate and ibuprofen tablets, 7.5 mg/200 mg are available as:

White, film-coated, round, convex tablets debossed with "5161" on one side and plain on the other side, in bottles of 100.

## **Storage**

Store at 20° to 25°C (68° to 77°F) [See USP Controlled Room Temperature].

Dispense in a tight, light-resistant container as defined in the USP, with a child-resistant closure (as required).

A Schedule CS-III Controlled Substance.

## **MEDICATION GUIDE FOR NON-STEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS)**

(See the end of this Medication Guide for a list of prescription NSAID medicines.)

### **What is the most important information I should know about medicines called Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)?**

**NSAID medicines may increase the chance of a heart attack or stroke that can lead to death.** This chance increases:

- with longer use of NSAID medicines
- in people who have heart disease

**NSAID medicines should never be used right before or after a heart surgery called a "coronary artery bypass graft (CABG)."**

**NSAID medicines can cause ulcers and bleeding in the stomach and intestines at any time during treatment. Ulcers and bleeding:**

- can happen without warning symptoms
- may cause death

**The chance of a person getting an ulcer or bleeding increases with:**

- taking medicines called "corticosteroids" and "anticoagulants"
- longer use
- smoking
- drinking alcohol
- older age
- having poor health

**NSAID medicines should only be used:**

- exactly as prescribed
- at the lowest dose possible for your treatment
- for the shortest time needed

**What are Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)?**

NSAID medicines are used to treat pain and redness, swelling, and heat (inflammation) from medical conditions such as:

- different types of arthritis
- menstrual cramps and other types of short-term pain

**Who should not take a Non-Steroidal Anti-Inflammatory Drug (NSAID)?****Do not take an NSAID medicine:**

- if you had an asthma attack, hives, or other allergic reaction with aspirin or any other NSAID medicine
- for pain right before or after heart bypass surgery

**Tell your healthcare provider:**

- about all of your medical conditions.
- about all of the medicines you take. NSAIDs and some other medicines can interact with each other and cause serious side effects.

**Keep a list of your medicines to show to your healthcare provider and pharmacist.**

- if you are pregnant. **NSAID medicines should not be used by pregnant women late in their pregnancy.**
- if you are breastfeeding. **Talk to your doctor.**

**What are the possible side effects of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)?**

<b>Serious Side effects include:</b>	<b>Other side effects include:</b>
• heart attack	• stomach pain
• stroke	• constipation
• high blood pressure	• diarrhea
• heart failure from body swelling (fluid retention)	• gas
• kidney problems including kidney failure	• heartburn
• bleeding and ulcers in the stomach and intestine	• nausea
• low red blood cells (anemia)	• vomiting
• life-threatening skin reactions	• dizziness
• life-threatening allergic reactions	
• liver problems including liver failure	
• asthma attacks in people who have asthma	

**Get emergency help right away if you have any of the following symptoms:**

- shortness of breath or trouble breathing
- chest pain
- weakness in one part or side of your body
- slurred speech
- swelling of the face or throat

**Stop your NSAID medicine and call your healthcare provider right away if you have any of the following symptoms:**

- nausea
- more tired or weaker than usual
- itching
- your skin or eyes look yellow
- stomach pain
- flu-like symptoms

- vomit blood
- there is blood in your bowel movement or it is black and sticky like tar
- unusual weight gain
- skin rash or blisters with fever
- swelling of the arms and legs, hands and feet

These are not all the side effects with NSAID medicines. Talk to your healthcare provider or pharmacist for more information about NSAID medicines.

**Other information about Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)**

- Aspirin is an NSAID medicine but it does not increase the chance of a heart attack. Aspirin can cause bleeding in the brain, stomach, and intestines. Aspirin can also cause ulcers in the stomach and intestines.
- Some of these NSAID medicines are sold in lower doses without a prescription (over-the-counter). Talk to your healthcare provider before using over-the-counter NSAIDs for more than 10 days.

**NSAID medicines that need a prescription**

Generic Name	Tradename
Celecoxib	Celebrex
Diclofenac	Cataflam, Voltaren, Arthrotec (combined with misoprostol)
Diflunisal	Dolobid
Etodolac	Lodine, Lodine XL
Fenoprofen	Nalfon, Nalfon 200
Flurbiprofen	Ansaid
Ibuprofen	Motrin, Tab-Profen, Vicoprofen (combined with hydrocodone), Combunox (combined with oxycodone)
Indomethacin	Indocin, Indocin SR, Indo-Lemmon, Indomethagan
Ketoprofen	Oruvail
Ketorolac	Toradol
Mefenamic Acid	Ponstel
Meloxicam	Mobic
Nabumetone	Relafen
Naproxen	Naprosyn, Anaprox, Anaprox DS, EC-Naproxyn, Naprelan, Naprapac (copackaged with lansoprazole)
Oxaprozin	Daypro
Piroxicam	Feldene
Sulindac	Clinoril
Tolmetin	Tolectin, Tolectin DS, Tolectin 600

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